This Listing of Claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

Claim 1 (previously presented): A purified, large-scale preparation comprising at least 200 grams of tissue factor pathway inhibitor (TFPI) or TFPI analog molecules, wherein less than 12% of the TFPI or TFPI analog molecules are modified species, wherein the modified species include one or more of the following:

an oxidized TFPI or TFPI analog molecule, as detected by reverse phase chromatography;

a carbamylated TFPI or TFPI analog molecule, as detected by cation exchange chromatography;

a deamidated TFPI or TFPI analog molecule, as detected through indirect measurement of isoaspartic acid;

a TFPI or TFPI analog molecule that comprises a cysteine adduct, as determined by amino acid analysis;

aggregated TFPI or TFPI analog molecules, as detected by size exclusion chromatography; and

a misfolded TFPI or TFPI analog molecule, as detected by non-denaturing SDS-polyacrylamide gel electrophoresis.

Claim 2 (original): The purified preparation of claim 1 wherein less than about 9% of the TFPI or TFPI analog molecules are oxidized.

Claim 3 (original): The purified preparation of claim 1 wherein less than about 3% of the TFPI or TFPI analog molecules are carbamylated.

Claim 4 (original): The purified preparation of claim 1 wherein less than about 9% of the TFPI or TFPI analog molecules are deamidated.

Claim 5 (original): The purified preparation of claim 1 wherein less than about 2% of the TFPI or TFPI analog molecules comprise a cysteine adduct.

Claim 6 (original): The purified preparation of claim 1 wherein less than about 3% of the TFPI or TFPI analog molecules are aggregated.

Claim 7 (original): The purified preparation of claim 1 wherein less than about 3% of the TFPI or TFPI analog molecules are misfolded.

Claim 8 (original): The purified preparation of claim 1 wherein members of the plurality of TFPI molecules have the amino acid sequence shown in SEQ ID NO:1.

Claim 9 (original): The purified preparation of claim 1 wherein the TFPI analog molecules are ala-TFPI molecules.

Claim 10 (previously presented): A large-scale pharmaceutical formulation comprising at least 200 grams of tissue factor pathway inhibitor (TFPI) or TFPI analog molecules, wherein less than

12% of the TFPI or TFPI analog molecules are modified species wherein the modified species include one or more of the following:

an oxidized TFPI or TFPI analog molecule, as detected by reverse phase chromatography;

a carbamylated TFPI or TFPI analog molecule, as detected by cation exchange chromatography;

a deamidated TFPI or TFPI analog molecule, as detected through indirect measurement of isoaspartic acid;

a TFPI or TFPI analog molecule that comprises a cysteine adduct, as determined by amino acid analysis;

aggregated TFPI or TFPI analog molecules, as detected by size exclusion chromatography; and

a misfolded TFPI or TFPI analog molecule, as detected by non-denaturing SDS-polyacrylamide gel electrophoresis.

Claim 11 (original): The pharmaceutical formulation of claim 10 wherein less than about 3% of the TFPI or TFPI analog molecules are oxidized.

Claim 12 (original): The pharmaceutical formulation of claim 10 wherein less than about 3% of the TFPI or TFPI analog molecules are carbamylated.

Claim 13 (original): The pharmaceutical formulation of claim 10 wherein less than about 9% of the TFPI or TFPI analog molecules are deamidated.

Claim 14 (original): The pharmaceutical formulation of claim 10 wherein less than about 3% of the TFPI or TFPI analog molecules comprise a cysteine adduct.

Claim 15 (original): The pharmaceutical formulation of claim 10 wherein less than about 3% of the TFPI or TFPI analog molecules are aggregated.

Claim 16 (original): The pharmaceutical formulation of claim 10 wherein less than about 3% of the TFPI or TFPI analog molecules are misfolded.

Claim 17 (original): The pharmaceutical formulation of claim 10 wherein members of the plurality of TFPI or TFPI analog molecules are TFPI molecules that have the amino acid sequence shown in SEQ ID NO:1.

Claim 18 (original): The pharmaceutical formulation of claim 10 wherein members of the plurality of TFPI or TFPI analog molecules are ala-TFPI molecules.

Claim 19 (previously presented): A large-scale pharmaceutical formulation comprising:

at least 200 grams of tissue factor pathway inhibitor molecules having an additional amino terminal alanine residue (ala-TFPI), wherein less than 12% of the TFPI or TFPI analog molecules are modified species, wherein the modified species include one or more of the following:

an oxidized ala-TFPI molecule, as detected by reverse phase chromatography;

a carbamylated ala-TFPI molecule, as detected by cation exchange chromatography;

a deamidated ala-TFPI molecule, as detected through indirect measurement of isoaspartic acid;

an ala-TFPI molecule that comprises a cysteine adduct, as determined by amino acid analysis;

aggregated TFPI or TFPI analog molecules, as detected by size exclusion chromatography; and

a misfolded ala-TFPI molecule, as detected by non-denaturing SDS-polyacrylamide gel electrophoresis,

wherein the pharmaceutical formulation comprises 20 mM sodium citrate, 300 mM L-arginine, and 5 mM methionine, pH 5.5.

Claim 20 (withdrawn-currently amended): A method of producing ~~purified tissue factor pathway inhibitor (TFPI) or TFPI analog molecules~~ the purified, large-scale preparation of claim 1, comprising the steps of:

(1) expressing TFPI or a TFPI analog in a rifampicin-resistant *E. coli* host cell, wherein the TFPI or the TFPI analog is encoded on a plasmid comprising the following elements:

(a) a transcription promoter;

(b) a ribosome binding site adjacent to the reclac transcription promoter;

(c) a nucleotide coding sequence that encodes the TFPI or the TFPI analog adjacent to the ribosome binding site;

(d) a transcription terminator adjacent to the nucleotide coding sequence;

(e) a replicon;

(f) an antibiotic resistance gene; and

(g) a gene encoding an N-terminal methionine-removing enzyme;

(2) isolating inclusion bodies containing the TFPI or the TFPI analog from the *E. coli* host cell;

(3) isolating the TFPI or the TFPI analog from the inclusion bodies to obtain isolated TFPI or TFPI analog;

(4) refolding the isolated TFPI or TFPI analog to form refolded TFPI or TFPI analog;

(5) purifying the refolded TFPI or TFPI analog by SP-Sepharose fast flow chromatography in the presence of Mg^{++} to form a first preparation of purified TFPI or TFPI analog;

(6) concentrating the first preparation of purified TFPI or TFPI analog to form a first concentrated preparation of purified TFPI or TFPI analog;

(7) purifying the first concentrated preparation of purified TFPI or TFPI analog by Q-Sepharose HP chromatography to form a second preparation of purified TFPI or TFPI analog;

(8) purifying the second preparation of purified TFPI or TFPI analog by butyl HIC chromatography to form a third preparation of purified TFPI or TFPI analog;

(9) purifying the third preparation of purified TFPI or TFPI analog by SP-Sepharose HP chromatography to form a fourth preparation of purified TFPI or TFPI analog;

(10) concentrating the fourth preparation of purified TFPI or TFPI analog to form a second concentrated preparation of purified TFPI or TFPI analog molecules, wherein less than about 12% of the TFPI or TFPI analog molecules are modified TFPI or TFPI analog molecules.

Claim 21 (withdrawn): The method of claim 20 wherein the transcription promoter is a reclac promoter.

Claim 22 (withdrawn): The method of claim 20 wherein the ribosome binding site is the ribosome binding site from gene 10 of bacteriophage T7.

Claim 23 (withdrawn): The method of claim 20 wherein the nucleotide coding sequence encodes ala-TFPI.

Claim 24 (withdrawn): The method of claim 23 wherein the nucleotide coding sequence is SEQ ID NO:44.

Claim 25 (withdrawn): The method of claim 20 wherein the transcription terminator comprises the nucleotide sequence shown in SEQ ID NO:42.

Claim 26 (withdrawn): The method of claim 20 wherein the replicon comprises a pBR322 origin of replication.

Claim 27 (withdrawn): The method of claim 20 wherein the replicon comprises a rop copy number control gene from pBR322.

Claim 28 (withdrawn): The method of claim 20 wherein the antibiotic resistance gene is streptomycin adenyltransferase.

Claim 29 (withdrawn): The method of claim 20 wherein the N-terminal methionine-removing enzyme is *E. coli* methionine aminopeptidase.

Claim 30 (withdrawn): The method of claim 20 wherein the *E. coli* host cell is MON210 (ATCC Accession No. PTA-5564).

Claim 31 (withdrawn-currently amended): A method of purifying tissue factor pathway inhibitor (TFPI) or TFPI analog molecules to provide the purified, large-scale preparation of claim 1, comprising the steps of:

(1) purifying recombinantly produced TFPI or TFPI analog molecules by SP-Sepharose fast flow chromatography to form a first preparation of purified TFPI or TFPI analog;

(2) concentrating the first preparation of purified TFPI or TFPI analog to form a first concentrated preparation of purified TFPI or TFPI analog;

(3) purifying the first concentrated preparation of purified TFPI or TFPI analog by Q-Sepharose HP chromatography to form a second preparation of purified TFPI or TFPI analog;

(4) purifying the second preparation of purified TFPI or TFPI analog by butyl HIC chromatography to form a third preparation of purified TFPI or TFPI analog;

(5) purifying the third preparation of purified TFPI or TFPI analog by SP-Sepharose HP chromatography to form a fourth preparation of purified TFPI or TFPI analog;

(6) concentrating the fourth preparation of purified TFPI or TFPI analog to form a second concentrated preparation of purified TFPI or TFPI analog molecules, wherein less than about 12% of the TFPI or TFPI analog molecules are modified TFPI or TFPI analog molecules.

Claim 32 (withdrawn): The method of claim 31 wherein the SP-Sepharose fast flow chromatography is performed in the presence of Mg^{++}.

Claim 33 (withdrawn): The method of claim 31 wherein the TFPI or TFPI analog molecules are produced in yeast cells.

Claim 34 (withdrawn): The method of claim 31 wherein the TFPI or TFPI analog molecules are produced in mammalian cells.

Claim 35 (withdrawn): The method of claim 34 wherein the mammalian cells are CHO cells.

Claim 36 (withdrawn): The method of claim 34 wherein the mammalian cells are HepG2 cells.

Claim 37 (withdrawn): The method of claim 34 wherein the mammalian cells are Chang liver cells.

Claim 38 (withdrawn): The method of claim 34 wherein the mammalian cells are SK hepatoma cells.

Claim 39 (withdrawn-currently amended): A method of expressing tissue factor pathway inhibitor (TFPI) or TFPI analog to provide the purified, large-scale preparation of claim 1, comprising:

(1) culturing a rifampicin-resistant *E. coli* host cell in a fermentation medium, wherein the *E. coli* host cell comprises a plasmid having the following elements:

(a) a transcription promoter;

(b) a ribosome binding site adjacent to the reclac transcription promoter;

(c) a nucleotide coding sequence that encodes TFPI or TFPI analog adjacent to the ribosome binding site;

(d) a transcription terminator adjacent to the nucleotide coding sequence;

(e) a replicon;

(f) an antibiotic resistance gene; and

(g) a gene encoding an N-terminal methionine-removing enzyme;

wherein one liter of the fermentation medium comprises 41 g dextrose, 2.5 g $(NH_4)_2SO_4$, 4.0 g sodium polyphosphate, 7.0 g K_2SO_4, 1.63 g $MgSO_4 \cdot 7H_2O$, 2.0 g methionine, 2.0 g glycerol, 0.5 mg H_3BO_4, 0.5 g cobalt chloride, 0.13 g $CuSO_4 \cdot 6H_2O$, 54.0 g $FeCl_3 \cdot 6H_2O$, 11.0 g $MnSO_4 \cdot H_2O$, 0.5 g $Na_2MoO_4 \cdot 2H_2O$, 0.02 $NaSeO_3$, 22.0 g $ZnSO_4 \cdot 7H_2O$, 0.01 ml concentrated H_2SO_4, and 0.55 ml UCON antifoam.

Claim 40 (withdrawn): The method of claim 39 wherein the transcription promoter is a reclac promoter.

Claim 41 (withdrawn): The method of claim 39 wherein the ribosome binding site is the ribosome binding site from gene 10 of bacteriophage T7.

Claim 42 (withdrawn): The method of claim 39 wherein the nucleotide coding sequence encodes ala-TFPI.

Claim 43 (withdrawn): The method of claim 42 wherein the nucleotide coding sequence is SEQ ID NO:44.

Claim 44 (withdrawn): The method of claim 39 wherein the transcription terminator comprises the nucleotide sequence shown in SEQ ID NO:42.

Claim 45 (withdrawn): The method of claim 39 wherein the replicon comprises a pBR322 origin of replication.

Claim 46 (withdrawn): The method of claim 39 wherein the replicon comprises a rop copy number control gene from pBR322.

Claim 47 (withdrawn): The method of claim 39 wherein the antibiotic resistance gene is streptomycin adenyltransferase.

Claim 48 (withdrawn): The method of claim 39 wherein the N-terminal methionine-removing enzyme is *E. coli* methionine aminopeptidase.

Claim 49 (withdrawn): The method of claim 39 wherein the *E. coli* host cell is MON210 (ATCC Accession No. PTA-5564).

Claim 50 (previously presented): The purified, large-scale preparation of claim 1 comprising 200 grams to 2.4 kilograms of tissue factor pathway inhibitor (TFPI) or TFPI analog.

Claim 51 (previously presented): The purified, large-scale preparation of claim 50 comprising 200-300 grams of tissue factor pathway inhibitor (TFPI) or TFPI analog.

Claim 52 (previously presented): The purified, large-scale preparation of claim 50 comprising 400-600 grams of tissue factor pathway inhibitor (TFPI) or TFPI analog.

Claim 53 (previously presented): The purified, large-scale preparation of claim 50 comprising 600-900 grams of tissue factor pathway inhibitor (TFPI) or TFPI analog.

Claim 54 (previously presented): The purified, large-scale preparation of claim 50 comprising 800-1200 grams of tissue factor pathway inhibitor (TFPI) or TFPI analog.

Claim 55 (previously presented): The purified, large-scale preparation of claim 1, wherein indirect measurement of isoaspartic acid comprises analyzing a byproduct S-adenosyl-homocysteine (SAH) by RP-HPLC, wherein the byproduct is generated from the transfer of a

methyl group from S-adenosyl-L-methionine (SAM) to isoaspartic acid, catalyzed by Protein Isoaspartyl Methyl Transferase (PIMT).

Claim 56 (previously presented): The purified, large-scale preparation of claim 10, wherein indirect measurement of isoaspartic acid comprises analyzing a byproduct S-adenosyl-homocysteine (SAH) by RP-HPLC, wherein the byproduct is generated from the transfer of a methyl group from S-adenosyl-L-methionine (SAM) to isoaspartic acid, catalyzed by Protein Isoaspartyl Methyl Transferase (PIMT).

Claim 57 (previously presented): The purified, large-scale preparation of claim 19, wherein indirect measurement of isoaspartic acid comprises analyzing a byproduct S-adenosyl-homocysteine (SAH) by RP-HPLC, wherein the byproduct is generated from the transfer of a methyl group from S-adenosyl-L-methionine (SAM) to isoaspartic acid, catalyzed by Protein Isoaspartyl Methyl Transferase (PIMT).